

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 709 - WATERWORKS

Water Supplies – Fresh water supplies

239WF – Water supply to remaining remote villages in the New Territories – stage 2

Members are invited to recommend to Finance Committee the upgrading of **239WF**, entitled “Water supply to remaining remote villages in the New Territories - stage 2”, to Category A at an estimated cost of \$109.4 million in money-of-the-day prices.

PROBLEM

Wu Kau Tang, Kau Tam Tso, Lai Chi Wo, Ap Chau and Kat O villages in North District and Mong Tung Wan village on Lantau Island lack a hygienic and reliable water supply.

PROPOSAL

2. The Director of Water Supplies (DWS), with the support of the Secretary for Works, proposes to upgrade **239WF** to Category A at an estimated cost of \$109.4 million in money-of-the-day (MOD) prices to provide metered water supply to –

- (a) the Wu Kau Tang, Kau Tam Tso and Lai Chi Wo villages under Village Water Supply Scheme (Scheme) No. 8;
- (b) the Ap Chau village under Scheme No. 46;

/(c)

- (c) the Kat O village under Scheme No. 47; and
- (d) the Mong Tung Wan village under Scheme No. 55.

PROJECT SCOPE AND NATURE

3. The scope of works under **239WF** comprises extension of treated water supply to six remote villages under the following Village Water Supply Schemes –

- (a) Scheme No. 8 – Water supply to Wu Kau Tang, Kau Tam Tso, Lai Chi Wo in North District
 - (i) construction of a fresh water pump house;
 - (ii) procurement and installation of pump sets and associated equipment;
 - (iii) laying of about 12.5 kilometres of fresh water mains ranging from 80 to 150 millimetres in diameter; and
 - (iv) construction of a fresh water tank with a capacity of 120 cubic metres.

We plan to start the proposed works in August 2001 for completion by January 2004.

- (b) Scheme No. 46 – Water supply to Ap Chau in North District
 - (i) laying of about 3.5 kilometres of fresh water mains of 100 millimetres in diameter; and
 - (ii) construction of a fresh water break pressure tank¹ with a capacity of 15 cubic metres.

We plan to start the proposed works in December 2001 for completion by May 2004.

- (c) Scheme No. 47 – Water supply to Kat O in North District

/(i)

¹ A fresh water break pressure tank is a tank which protects the pipeline system from excessive hydraulic pressure.

- (i) laying of about 7.5 kilometres of fresh water mains of 100 millimetres in diameter; and
- (ii) construction of a fresh water break pressure tank with a capacity of 25 cubic metres.

We plan to start the proposed works in December 2001 for completion by May 2004.

- (d) Scheme No. 55 – Water supply to Mong Tung Wan on Lantau Island
 - (i) laying of about 3.8 kilometres of fresh water mains of 100 millimetres in diameter.

We plan to start the proposed works in August 2001 for completion by June 2003.

4. The site plan showing the proposed works under **239WF** is at Enclosure 1.

JUSTIFICATION

5. The six remote villages described in paragraph 3 above have a total population of about 900. At present, they obtain their water from streams and wells. We consider the potable use of untreated water from such sources to be unhygienic and a possible health hazard. Having considered the condition of the local water sources, the population in each of the villages, the cost of providing treated water and the developments in their vicinity, DWS proposes to provide metered water supply to the villages concerned.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the proposed works to be \$109.4 million in MOD prices (see paragraph 7 below), made up as follows –

	\$ million
(a) Village Water Supply Scheme No. 8	44.9
(i) construction of a fresh water pump house	2.4
(ii) mechanical and electrical works	1.8

/(iii)

		\$ million	
	(iii) laying of water mains	37.8	
	(iv) construction of a fresh water tank	2.9	
(b)	Village Water Supply Scheme No. 46	12.3	
	(i) laying of water mains	11.1	
	(ii) construction of a fresh water break pressure tank	1.2	
(c)	Village Water Supply Scheme No. 47	22.3	
	(i) laying of water mains	20.6	
	(ii) construction of a fresh water break pressure tank	1.7	
(d)	Village Water Supply Scheme No. 55	11.3	
	(i) laying of water mains	11.3	
(e)	Environmental mitigation measures	1.0	
(f)	Contingencies	9.1	
	Sub-total	100.9	(in September 2000 prices)
(g)	Provision for price adjustment	8.5	
	Total	109.4	(in MOD prices)

7. Subject to approval, we will phase the expenditure as follows –

/2001

Year	\$ million (Sept 2000)	Price Adjustment Factor	\$ million (MOD)
2001 – 2002	3.6	1.02550	3.7
2002 – 2003	35.7	1.05627	37.7
2003 – 2004	40.1	1.08795	43.6
2004 – 2005	13.2	1.12059	14.8
2005 – 2006	8.3	1.15421	9.6
	100.9		109.4

8. We have derived the MOD estimates on the basis of the Government's latest forecasts of trend labour and construction prices for the period 2001 to 2006. We shall invite tenders for the civil works under standard remeasurement contracts because the quantities of the works are subject to variation during construction to suit the actual site conditions. We shall allow provision for price adjustment in the three contracts because the construction period of each contract will exceed 21 months. Separately, we shall invite tenders for the supply of the new pump sets under a fixed price lump sum contract and will carry out the installation work by utilising in-house resources.

9. We estimate the annually recurrent expenditure arising from this project to be \$672,000.

10. This project by itself will lead to an increase in water charges by 0.06% in real terms by 2006².

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² The increase in water charges is calculated on the assumption that the demand remains static during the period from 2000 to 2006 and the amount of Government subsidy to the waterworks operations is to be contained at the present level.

PUBLIC CONSULTATION

11. We consulted on 6 September 2000 and 12 September 2000 the Sha Tau Kok Rural Committee and the District Development and Environmental Improvement Committee of the North District Council respectively on Village Water Supply Scheme Nos. 8, 46 and 47. Both Committees supported the proposed schemes.

12. We consulted the South Lantau Rural Committee (SLRC) on Village Water Supply Scheme No. 55 on 29 June 2000. The SLRC supported the proposed scheme.

13. We consulted the LegCo Panel on Planning, Lands and Works on **239WF** on 2 April 2001. The Panel Members generally supported the implementation of the project.

ENVIRONMENTAL IMPLICATION

14. The project will not have any long term environmental impact. We will design the fresh water tank, fresh water break pressure tanks and fresh water pump house such that the level of the intruding noise during their operation complies with the established criteria, standards and guidelines. For short-term construction impacts, standard pollution control measures³ will be sufficient to mitigate the impacts. We have included in the project the cost of implementing these mitigation measures (\$1.0 million in September 2000 prices) and will incorporate these requirements into the works contract for implementation.

15. We have taken due consideration of the need to minimize the generation of construction and demolition (C&D) materials in designing the levels, alignments, orientations, and dimensions of the proposed water mains, fresh water tank, fresh water break pressure tanks and fresh water pump house. To further minimize the generation of C&D materials, we will encourage the contractors to use steel instead of timber in formwork and temporary works. We estimate that about 7 940 cubic metres (m³) of C&D materials will be generated by the projects. Of these, about 4 240m³ (53.4%) will be reused on site, 3 645m³ (45.9%) will be reused as fill in public filling areas and 55m³ (0.7%) will be disposed of at landfills.
/We

³ The standard pollution control measures include wheel washing facilities, de-silting traps, the use of silenced plant and other procedures as recommended in the Environmental Protection Department's Recommended Pollution Control Clauses.

We will require the contractors to submit waste management plans (WMP) with appropriate mitigation measures, including the allocation of areas for waste segregation on-site to facilitate reuse or recycling of C&D materials, for approval. We will ensure that the day-to-day operations on site comply with the approved WMP. We will implement a trip-ticket system to control the proper disposal of C&D materials and will record the reuse, recycling and disposal of C&D materials for monitoring purposes.

LAND ACQUISITION

16. The proposed works do not require land acquisition.

BACKGROUND INFORMATION

17. We have a plan to provide metered water supply to 53 remote villages which rely on local water resources for potable use. Works have started at 18 of these villages and detailed designs are being drawn for 20 other villages (including the six proposed). We will expedite planning for the supply of metered water to the remaining 15 remote villages.

18. We upgraded **239WF** to Category B in September 1998.

19. DWS has substantially completed the detailed design for the proposed works using in-house staff resources.

20. We estimate that the proposed works will create some 85 jobs during the construction period. These will comprise 15 professional/technical staff and 70 labourers, totalling 1 850 man-months.

Works Bureau
April 2001

(PWSC0352/WIN16)



沙頭角
SHA TAU KOK

現有的海底食水管
EXISTING SUBMARINE PIPELINES

鴨洲
AP CHAU

吉澳
KAT O

吉澳海
CROOKED HARBOUR
(Kat O Ho)

沙頭角海
STARLING INLET
(Sha Tau Kok Ho)

擬建的鎖鑰盆食水減壓缸
PROPOSED SO LO PUN FRESH
WATER BREAK PRESSURE TANK

擬建的鹿頸食水泵房
PROPOSED LUK KENG FRESH
WATER PUMP HOUSE

擬建的烏蛟騰食水缸
PROPOSED WU KAU TANG
FRESH WATER TANK

現有的海底食水管
EXISTING SUBMARINE PIPELINE

擬建的西流江食水減壓缸
PROPOSED SAI LAU KONG FRESH
WATER BREAK PRESSURE TANK

現有的食水管
EXISTING FRESH WATER MAIN

圖例 LEGEND :

擬敷設的食水管
PROPOSED FRESH WATER MAINS

- 計劃編號 8 - 北區烏蛟騰、九担租及荔枝窩供水計劃
SCHEME NO. 8 - WATER SUPPLY TO WU KAU TANG, KAU TAM TSO
AND LAI CHI WO IN NORTH DISTRICT
- 計劃編號 46 - 北區鴨洲供水計劃
SCHEME NO. 46 - WATER SUPPLY TO AP CHAU IN NORTH DISTRICT
- 計劃編號 47 - 北區吉澳供水計劃
SCHEME NO. 47 - WATER SUPPLY TO KAT O IN NORTH DISTRICT

SCALE 比例尺 1 : 50 000

核准 APPROVED

14 / 2 / 2001

(甲級工程)
(CAT 'A' SUBMISSION)

工務計劃項目第239WF號 — 新界餘下偏遠鄉村供水計劃 - 第二階段
PWP ITEM NO.239WF — WATER SUPPLY TO REMAINING REMOTE VILLAGES
IN THE NEW TERRITORIES - STAGE 2

(二之一)
(SHEET 1 OF 2)

水務署
WATER SUPPLIES DEPT.
草圖編號 SK 62000 / 105 / 001



現有的食水管道
EXISTING FRESH WATER MAIN

貝澳灣
PUI O WAN

芝麻灣半島
CHI MA WAN
PENINSULA

望東灣
MONG TUNG WAN

比例尺 SCALE 1 : 20 000

圖例 LEGEND :

擬敷設的食水管道
PROPOSED FRESH WATER MAINS

—— 計劃編號 55 - 大嶼山望東灣供水計劃
SCHEME NO. 55 - WATER SUPPLY TO MONG TUNG WAN ON LANTAU ISLAND

核准 APPROVED
Cyclone
總工程師/設計 CE / Des

14 / 2 / 2001

(甲級工程)
(CAT 'A' SUBMISSION)

工務計劃項目第239WF號 — 新界餘下偏遠鄉村供水計劃 - 第二階段
PWP ITEM NO.239WF — WATER SUPPLY TO REMAINING REMOTE VILLAGES
IN THE NEW TERRITORIES - STAGE 2

(二之二)
(SHEET 2 OF 2)



水務署
WATER SUPPLIES DEPT.

草圖編號 SK 62000 / 105 / 002